

Central Valley Regional Water Quality Control Board
28/29/30 July 2010 Board Meeting

Response to Comments
for the
City of Rio Vista
Northwest Wastewater Treatment Facility
Tentative Waste Discharge Requirements

The following are Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) staff responses to comments submitted by interested parties regarding the tentative Waste Discharge Requirements (WDRs) (NPDES No. CA0083771) renewal for the City of Rio Vista (Discharger) Northwest Wastewater Treatment Facility (Facility).

A tentative NPDES permit was issued for public comment on 18 March 2010 with comments due by 19 April 2010. The Central Valley Water Board received public comments regarding the 18 March 2010 tentative NPDES Permit by the deadline from the Discharger, the US Environmental Protection Agency Region IX (USEPA), and the California Sportfishing Protection Alliance (CSPA). Minor changes were made to the 18 March 2010 tentative Order based on public comments received. A second tentative Order was circulated on 10 June 2010, to allow public comments on the changes, which are due by 12 July 2010. Staff will respond to further public comments at the Board meeting, as appropriate.

Written comments on the 18 March 2010 tentative Order are summarized below, followed by Central Valley Water Board staff responses.

CITY OF RIO VISTA (DISCHARGER) COMMENTS

Discharger Comment No. 1. Ultraviolet (UV) Disinfection System Operating Specifications and UV Disinfection System Monitoring and Reporting Requirements

The Discharger comments that the proposed Order imposes turbidity requirements that are more stringent than those contained in other Central Valley Water Board permits. The turbidity requirements in the proposed Order include a minimum UV dosage of 80 mJ/cm² and turbidity specifications requiring detections of less than 0.2 NTU over a 24-hour period, less than 0.5 NTU for 5% of the time over a 24-hour period, and less than 1 NTU at all times. The Discharger comments that these requirements are based on the National Water Research Institute (NWRI) and American Water Works Association Research Foundation's (AWWRF) May 2003 *"Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse"* (the "Disinfection Guidelines"). The Disinfection Guidelines were developed for drinking water and recycled water, which infers that the treated water is applied without dilution or further treatment.

The Facility discharges to surface water and receives a minimum 20:1 dilution. Currently, none of the Facility effluent is used for reclamation and there is no reclamation program in place. A Reclamation Study will be conducted as required in

the proposed Order. However, the Discharger requests that the Title 22 requirements associated with the reclamation be eliminated from the permit until this study is completed, and reinserted only if the results of the study indicate that reclamation is feasible and the Facility implements a reclamation program. Specifically, the Discharger requests that the UV dosage change to 100 mJ/cm^2 with the corresponding turbidity requirements of less than 2 NTU over a 24-hour period, less than 5 NTU 5% of the time over a 24-hour period, and less than 10 NTU at all times.

In addition, the Discharger currently monitors turbidity of the individual membrane bioreactor (MBR) process trains for the Facility, and it is unknown if the turbidity requirements in the tentative NPDES permit are achievable. The Discharger agrees to begin monitoring within 120 days of permit adoption (to allow time to obtain and install the necessary monitoring equipment).

RESPONSE: The UV dosage and turbidity specifications in the proposed Order have been established based on recommendations in the Disinfection Guidelines. The UV System specifications are included to ensure that adequate UV dosage is applied to the wastewater to inactivate pathogens (e.g., viruses in the wastewater). Turbidity is included as an operational specification because it serves as an indicator of the effectiveness of the treatment process and helps assure compliance with effluent limitations for total coliform organisms. Failure of the treatment system (such that virus removal is impaired) would normally result in increased particles in the effluent, which would result in higher effluent turbidity and could impact UV dosage. Using turbidity to monitor filter performance is advantageous, because it allows the Discharger to immediately detect filter failure and to institute rapid corrective action.

The Disinfection Guidelines provide recommendations for minimum UV dosage, and these recommendations are based on the turbidity. For standard filtration, the turbidity is not expected to exceed 2 NTU as a daily average, 5 NTU more than 5% of the time during a 24-hour period, or 10 NTU at anytime. Based on this turbidity, the Disinfection Guidelines recommend a UV dosage of 100 mJ/cm^2 . The Disinfection Guidelines recognize that membrane filtration, as used at the Facility, can achieve lower turbidity. With lower turbidity, a lower UV dosage may be used to achieve the same level of pathogen reduction. The 18 March 2010 tentative Order contained the lower turbidity specifications, limiting the turbidity to 0.2 NTU as a daily average, 0.5 NTU more than 5% of the time during a 24-hour period, or 1 NTU at anytime, and the corresponding UV dosage of 80 mJ/cm^2 . The Discharger is concerned about meeting the more stringent turbidity specifications, and has requested that they be set at the levels for standard filtration, and that the required UV dosage be set to 100 mJ/cm^2 . Central Valley Water Board staff has included this change in the proposed Order. The combined turbidity and UV dosage specifications result in the same level of pathogen removal. This change is reflected in the 10 June 2010 tentative Order.

See response to Discharger Comment No. 3 regarding the continuous monitoring requirements for effluent turbidity.

Discharger Comment No. 2. Dilution Credit for Ammonia and Nitrate plus Nitrite

The Discharger comments that the proposed Order allows for a dilution credit of 20:1 for the discharge. However, the Discharger notes that dilution is not granted for all constituents with final effluent limits. Specifically, there is assimilative capacity for ammonia and for nitrate plus nitrite. The Fact Sheet notes that the reasonable potential analysis is based on the Discharger's potential to violate the Basin Plan's narrative toxicity objective. However, all acute bioassay results show 100% survival in the effluent, and there has been no indication of chronic toxicity. For nitrate plus nitrite, the maximum observed effluent concentration is 47 mg/L, which is above the criteria of 10 mg/L. The Fact Sheet notes that while the maximum effluent concentration appears to be an outlier, there is limited nitrate data.

The Discharger requests that a dilution credit of 20:1 be allowed for the derivation of ammonia and nitrate plus nitrite effluent limits.

RESPONSE: Central Valley Water Board staff does not concur. A dilution credit of 20:1 should not be allowed for the derivation of ammonia and nitrate plus nitrite effluent limits. Due to concerns about ammonia in the Delta, and because the Facility is capable of providing full nitrification/denitrification resulting in little or no ammonia, nitrate, and nitrite in the discharge, a dilution credit is not proposed.

Discharger Comment No. 3. Monitoring Requirements for Turbidity and the Emergency Storage Basin (ESB)

The Discharger comments that the monitoring requirements associated with both turbidity and the ESB will require it to obtain and install additional equipment. In addition, the Discharger comments that monitoring the volume of water in the ESB may be infeasible. The Discharger requests that the requirements to monitor turbidity and discharges to the ESB become effective 120 days after adoption of the permit to allow the Discharger time to complete installation of the needed equipment. The Discharger also requests that the requirement to record the "total volume of wastewater directed to the ESB basin" be changed to the "approximate volume based on level measured in the ESB basin".

RESPONSE: Central Valley Water Board staff concurs that the Discharger needs time to install the necessary monitoring equipment that will provide continuous monitoring for turbidity and flow monitoring for discharges to the ESB. Therefore, the proposed Order has been revised to make the monitoring requirements become effective 120 days after adoption of the permit. Staff has also clarified the term "total volume of wastewater directed to the basin" in the monitoring requirements to allow

the Discharger to estimate the volume of wastewater directed to the basin. These changes are reflected in the 10 June 2010 tentative Order.

Discharger Comment No. 4. Monitoring Locations

The Discharger requests that the Board make revisions to the language on the map in Attachment B, so that this matches the language for the description of the monitoring locations in Table E-1 of Attachment E.

RESPONSE: The proposed Order has been changed to reflect the comment. This change is reflected in the 10 June 2010 tentative Order.

Discharger Comment No. 5. Other Corrections

The Discharger requests that “Veolia West Operating Services, Inc.” be replaced with “Veolia Water West Operating Services Inc” throughout the proposed Order.

RESPONSE: The proposed Order has been changed to reflect the comment. This change is reflected in the 10 June 2010 tentative Order.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (USEPA)

USEPA Comment No. 1. Biosolids Requirements

USEPA comments that the tentative NPDES permit should be updated with the most current biosolids requirements.

RESPONSE: Central Valley Water Board staff does not concur that additional biosolids requirements, based on the requirements of 40 CFR Part 503, need to be expressly included in the proposed Order. The regulations established at 40 CFR Part 503 are self-implementing, meaning that anyone engaged in activities covered by the regulations must comply with the appropriate requirements on or before the compliance deadlines, regardless of whether these requirements are contained in an NPDES permit. The State does not have delegated authority to directly implement 40 CFR Part 503. Therefore, the proposed Order does not include the additional biosolids requirements. However, Provision VI.C.5.b.iv of the proposed Order requires that the use and disposal of biosolids comply with existing federal and State laws and regulations, including permitting requirements and technical standards included in 40 CFR Part 503.

USEPA Comment No. 2. Whole Effluent Toxicity (WET) Accelerated Testing Requirements

USEPA comments that the Central Valley Water Board should modify the chronic WET language and accelerated testing requirements to clarify the difference between the toxicity reduction evaluation (TRE) plan to be submitted within 90 days of permit adoption (i.e., the initial investigative TRE workplan) and the TRE workplan that may be required after accelerated testing. USEPA comments that the plan names should be consistent with the USEPA guidance and the Central Valley Water Board should specify what is required to be included in each plan. Additionally, USEPA comments that the Central Valley Water Board should change the language to exclude the words “a pattern of toxicity,” as this is subjective.

RESPONSE: For discharges that do not exhibit reasonable potential to cause or contribute to an exceedance of the Basin Plan’s narrative toxicity objective for whole effluent toxicity, the Central Valley Water Board requires Dischargers to submit an initial investigative TRE workplan to ensure that the Discharger has a plan to immediately address toxicity if it is encountered in the future. This is the case for this Facility, as the Facility does not exhibit reasonable potential to cause or contribute to an exceedance of the Basin Plan’s narrative toxicity objective for whole effluent toxicity.

For discharges that do exhibit reasonable potential, the Central Valley Water Board requires Dischargers to develop detailed TRE workplans. A detailed TRE workplan can be costly to develop, and need not be developed for this Facility at this time, considering the lack of toxicity in the effluent discharge. Therefore, the proposed Order only requires the initial investigative TRE workplan, which is a 1-2 page document that outlines the procedures that the Discharger would follow if toxicity is encountered in the future. These requirements conform to EPA guidance. If chronic toxicity exceeding the numeric chronic toxicity trigger occurs in the future, the proposed Order requires the Discharger develop a detailed TRE workplan.

Central Valley Water Board staff concur that the WET language referring to “a pattern of toxicity” is subjective and the proposed Order has been revised to remove this language. This change is reflected in the 10 June 2010 tentative Order.

USEPA Comment No. 3. Effluent Monitoring Frequency for Total Suspended Solids (TSS)

USEPA comments that the Central Valley Water Board should clarify that the proposed Order monitoring frequency for biochemical oxygen demand (BOD) is once per week and TSS is once per month instead of once per week.

RESPONSE: The monitoring frequency for TSS has been revised to once per week to coincide with the weekly BOD monitoring. This change is reflected in the 10 June 2010 tentative Order.

USEPA Comment No. 4. Receiving Water Monitoring for Fecal Bacteria

USEPA comments that the Central Valley Water Board should clarify why the proposed Order contains receiving water limitations for fecal bacteria but does not contain receiving water monitoring for fecal bacteria.

RESPONSE: The final effluent limits for total coliform organisms (23 most probable number [MPN] per 100 mL, more than once in any 30-day period and 240 MPN/mL, as instantaneous maximum) prescribed in the proposed Order are more stringent than what would be required to meet the Basin Plan receiving water objectives for fecal coliform. Compliance with the total coliform effluent limitations ensures compliance with the fecal coliform receiving water limits. Therefore, fecal coliform receiving water monitoring is not necessary.

USEPA Comment No. 5. Emergency Storage Basin (Ponds) Monitoring

USEPA comments that the proposed Order requires sampling of the ponds (Attachment E, IX.B.1.a) but does not include the required sampling parameters.

RESPONSE: There was a typo in the 18 March 2010 tentative order. Central Valley Water Board staff corrected the monitoring requirements for the ponds. The Discharger is not required to sample the wastewater in the ponds, but is required to keep a log related to the use of the basin. This log is to be submitted with the monthly self-monitoring reports. This change is reflected in the 10 June 2010 tentative Order.

USEPA Comment No. 6. Other Clarifications

USEPA comments that the proposed Order contains a discrepancy in effluent concentrations of 1,2-diphenylhydrazine. The effluent concentrations of 1,2-diphenylhydrazine were non-detect in the Fact Sheet (pg. F-38), but the monitoring results in Table F-2 shows a highest daily discharge of 5 µg/L.

USEPA also comments that the proposed Order should include specific reopeners for diazinon and chlorpyrifos TMDLs if they are expected to be adopted within the term of the NPDES permit.

RESPONSE: Central Valley Water Board staff concurs that there is a discrepancy and has corrected the effluent concentrations for 1,2-diphenylhydrazine in both sections of the proposed Order.

Diazinon and chlorpyrifos TMDLs are not expected to be adopted within the permit term. Therefore, reopeners were not added to the proposed Order.

CALIFORNIA SPORTFISHING PROTECTION ALLIANCE (CSPA) COMMENTS

CSPA Comment No. 1. Effluent Data

CSPA comments that the proposed Order fails to utilize valid, reliable, and representative effluent data in conducting a reasonable potential analysis and in deriving effluent limits, contrary to the SIP and USEPA's interpretation of Federal Regulations 40 CFR 122.44(d). CSPA comments that the proposed Order violates 40 CFR 122.4(a),(d) and (g) and California Water Code section 13377.

CSPA comments that Central Valley Water Board staff should not have excluded the 18 December 2002 receiving water data from the reasonable potential analysis (RPA) dataset. CSPA comments that the 18 December 2002 sample is a critical data point that contains elevated concentrations of several metals. CSPA contends that, because the RPA and the development of permit limitations was based on a data set that does not include the 18 December 2002 data, the proposed Order fails to contain effluent standards or limitations necessary to implement water quality control plans, to protect beneficial uses, or to prevent nuisance. CSPA recommends re-drafting the proposed Order and re-circulating it for public comment.

RESPONSE: Section 1.4.3.1 of the SIP states that,

“... the RWQCB shall have discretion to consider if any samples are invalid for use as applicable data due to evidence that the sample has been erroneously reported or the sample is not representative of the ambient receiving water column that will mix with the discharge. For example, the RWQCB shall have discretion to consider samples to be invalid that have been taken during peak flows of significant storm events.”

The 18 December 2002 receiving water sampling event included elevated total recoverable metals concentrations for several metals (see Table below), which is an indication of the high sediment load that occurs during storm events. Metals criteria are based on dissolved metals. The elevated total recoverable metals concentrations during the storm event (e.g., 5-7 times other samples) were likely due to a large sediment load in the river, which will increase the total metals concentration, not the dissolved metals concentration.

According to Department of Water Resources flow data, the Sacramento River was flowing at 48,465 cubic feet per second (cfs) on 18 December 2002 at the Freeport Bridge. Precipitation data from Sacramento County Department of Water Resources indicates that from 13 December 2002 to 15 December 2002, an accumulated rainfall amount of 8.19 inches was measured in Sacramento County (at Morrison Creek on Mack Road). The 18 December 2002 sample was taken near the peak of the storm event, which saw the Sacramento River peak at 53,160 cfs on 20 December 2002. The Sacramento River flows were approximately 10,000 cfs

prior to this storm event. This information indicates that the 18 December 2002 sample was collected during a significant storm event. Therefore, in accordance with the SIP, Central Valley Water Board staff determined that the data was not representative of the ambient receiving water column that will mix with the discharge.

The table below shows the ambient total recoverable metal concentrations and the corresponding Sacramento River flow for the samples collected by the Discharger in 2002. As shown by the data, the 18 December 2002 samples are elevated, due to the storm event. This is just a sampling of the metals data that showed sharp contrasts. The remaining metals data were fairly consistent throughout the four sampling events.

Metals	Sample Date (Sacramento River Flow)				% Diff ²
	30 Jan 2002 (19,724 cfs)	5 Jun 2002 (12,740 cfs)	10 Sep 2002 (13,877 cfs)	18 Dec 2002 (48,465 cfs)	
	Total Recoverable Metals Concentration (µg/L)				
Copper	4.4	3.6	3.4	14	370%
Aluminum	700	700	800	5000	680%
Manganese ¹	33	25	23	9.9	40%
Zinc	5	4	4	24	550%
Nickel	5.5	3.9	4.6	22	470%
Lead	0.52	0.4	0.4	3.1	710%
Iron ¹	1600	1000	1100	9.4	0.80%

¹ The reported concentrations for manganese and iron are very unusual considering the high sediment load in the river. These constituents typically increase when there are high sediment loads. It is suspected that the incorrect units were used. However, lab sheets were not available to verify.

² Percent difference between the 18 December sample and the average of the previous 3 samples.

CSPA Comment No. 2. Effluent Limitations for Metals Based on Hardness

CSPA comments that the proposed Order establishes effluent limitations for metals based on the hardness of the effluent and/or the downstream water, and does not use the ambient upstream receiving water hardness as required by Federal Regulations, the California Toxics Rule (CTR, 40 CFR 131.38(c)(4)).

CSPA contends that the Central Valley Water Board's approach in using the downstream hardness to conduct a reasonable potential analysis (RPA) uses the allowance of a mixing zone prior to conducting the RPA, which is inappropriate and unprotective of the receiving water aquatic life beneficial use.

RESPONSE: The proposed Order has established the criteria for hardness-dependant metals based on the reasonable worst-case estimated ambient hardness as required by the SIP, the CTR and State Water Board Order WQ 2008-0008 (City

of Davis Order). The SIP does not explicitly address how the Board should determine ambient hardness in calculating limits for hardness-dependant metals. The SIP simply states, in Section 1.2, that the criteria shall be properly adjusted for hardness using the hardness of the receiving water. The CTR requires that, for waters with a hardness of 400 mg/L (as CaCO₃) or less, the actual ambient hardness values used must be consistent with the design discharge conditions for design flows and mixing zones. The CTR does not define whether the term “ambient”, as applied in the regulations, necessarily requires consideration of upstream as opposed to downstream hardness conditions. The Central Valley Water Board has considerable discretion in determining ambient hardness. (City of Davis Order, p.10). The hardness values must also be protective under all flow conditions (Id., pp. 10-11).

In the City of Davis Order, the State Water Board found that the effluent limits in the City of Davis’ permit were not sufficiently protective under all flow conditions, and that the Central Valley Water Board had not appropriately used downstream data to calculate limits. However, unlike the City of Davis, the proposed Order uses the minimum upstream receiving water hardness of 50 mg/L to calculate the CTR metals criteria. The CTR metals criteria were not calculated using the hardness of the effluent mixed with the receiving water, because Board staff concluded that the effluent hardness dataset was not sufficiently robust to ensure that the minimum observed effluent hardness represented the expected low hardness of the effluent.

CSPA Comment No. 3. Mixing Zone

CSPA comments that the proposed Order contains an allowance for a mixing zone that does not comply with the requirements of Federal Regulation 40 CFR section 131.12 (a)(1), the SIP, or the Basin Plan. CSPA’s comments are summarized as follows:

- The CORMIX computer model is not adequate for tidally influenced rivers;
- The proposed Order failed to address the mixing zone requirements of the SIP;
- The allowance of a mixing zone is not in compliance with 40 CFR section 131.12 (a)(1) and state antidegradation policy (Resolution 68-16).

RESPONSE: The mixing zones and dilution credits allowed in the proposed Order are in compliance with the SIP and are adequately protective of the beneficial uses of the receiving water. The allowance of mixing zones and dilution credits is discussed in detail in the Fact Sheet in Section IV.C.2.d.

ECOLOGIC Engineering conducted a mixing zone study titled *Best Practicable Treatment and Control Development of a Mixing Zone*, dated 1 January 2004, using CORMIX computer modeling to assess whether the proposed diffuser would provide greater than 20:1 dilution. The study demonstrated that, within a mixing zone 150 feet (upstream and downstream) x 100 feet wide, the maximum effluent concentration was 2.5% (i.e., 40:1 dilution). This area was conservatively

established as the acute and chronic mixing zone. This is a very small mixing zone as compared to the entire river width of 2,300 feet.

The Sacramento River in the vicinity of the discharge is tidally influenced, resulting in flow reversals. With flow reversals, some volume of river water is multiple-dosed with the effluent as the river flows downstream past the discharger, reverses moving upstream past the discharge, a second time, then again reverses direction and passes the discharge point a third time as it moves down the river. A particular volume of river water may move back and forth, past the discharge point many times due to tidal action, each time receiving an additional load of wastewater. CORMIX was not developed to account for multiple dosing that may occur in tidal zones. Therefore, a very conservative approach was employed by ECOLOGIC Engineering to account for the multiple dosing affects. The study states the following:

“CORMIX is intended primarily for the modeling of steady-state operational conditions and one-time flow reversals. However, in the case of the NWWTF discharge into the Sacramento River, it is estimated that under critical low river flow conditions a parcel of water could pass over the diffuser up to about 13 times (over the course of about three days). This is because of the large magnitude of the tidally-influenced flows compared to the net downstream river flows under critical low river flow conditions. Therefore, some accounting for these additional doses of effluent beyond the “one-time” flow reversal capabilities of the CORMIX model was necessary to allow for proper diffuser selection and modeling.

Because of the timing, turbulence, and traverse of these multiple tidal flows, the earlier doses of effluent become dispersed over much of the river width while the last two doses at the flow reversal will have dispersed very little beyond the river cross-sectional area over the diffuser. It is assumed that the 11 earlier effluent doses preceding the final two effluent doses will have dispersed to a net/average effect of those earlier doses being uniformly dispersed in roughly the one-third of the river cross section that includes the diffuser. In other words, 11 doses of effluent (at effluent flows commensurate with low river flows) are diluted into one-third of the river flow, and this constitutes a “background percentage” of effluent already in the river water at the time of the most critical two effluent doses occurring at the final tidally induced flow reversal. This “background percentage” of effluent in the river flow from the first 11 doses of effluent is estimated to be 1.3 percent. An effluent concentration of 1.3 percent was, therefore, added to the results obtained from the CORMIX model for assessment of diffuser effectiveness.”

This approach, which accounts for multiple dosing, is very conservative and likely overestimates the effluent concentrations in the river.

CSPA, in its comments, cites Article 10, Section 2 of the California Constitution. That section applies to appropriation of water. Permitting a discharge is not an appropriation.

The mixing zone is as small as practicable, will not compromise the integrity of the entire water body, restrict the passage of aquatic life, dominate the water body or overlap existing mixing zones from different outfalls. The mixing zone is very small relative to the large size of the receiving water and is approximately 10 miles from the nearest drinking water intake and does not overlap a mixing zone from a different outfall.

The mixing zone will not cause acutely toxic conditions to aquatic life passing through the mixing zone, because the proposed Order requires compliance with an acute toxicity effluent limitation and requires acute bioassays using 100% effluent. Compliance with the acute toxicity effluent limitation assures the effluent is not acutely toxic.

The discharge will not adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under the Federal or State endangered species laws, because the mixing zone is very small and acutely toxic conditions will not occur in the mixing zone.

The discharge will not produce undesirable or nuisance aquatic life, result in floating debris, oil, or scum, produce objectionable odor, taste, or turbidity, cause objectionable bottom deposits, or cause nuisance, because the proposed Order requires end-of-pipe effluent limitations (e.g. for biochemical oxygen demand and total suspended solids) and discharge prohibitions to prevent these conditions from occurring.

As suggested by the SIP, in determining the extent of or whether to allow a mixing zone and dilution credit, the Central Valley Water Board has considered the presence of pollutants in the discharge that are carcinogenic, mutagenic, teratogenic, persistent, bioaccumulative, or attractive to aquatic organisms, and concluded that the allowance of the mixing zone and dilution credit is adequately protective of the beneficial uses of the receiving water.

The mixing zone therefore complies with the SIP. The mixing zone also complies with the Basin Plan, which requires that the mixing zone not adversely impact beneficial uses. Beneficial uses will not be adversely affected for the same reasons discussed above. In determining the size of the mixing zone, the Central Valley Water Board has considered the procedures and guidelines in the EPA's Water Quality Standards Handbook, 2d Edition (updated July 2007), Section 5.1 and Section 2.2.2 of the Technical Support Document for Water Quality-Based Toxics Control (TSD). The SIP incorporates the same guidelines. The TSD indicates that this limitation achieves the objectives of preventing lethality to passing organisms and preventing significant human health risks.

The proposed Order is for an existing discharge with no increase in capacity or permitted flow. State Water Board and EPA guidelines do not require a new antidegradation analysis. (Memo to the State Water Resources Control Board from

William Attwater, memo to Regional Board Executive Officers (10/7/87), p.5; *EPA Water Quality Handbook 2d*, §4.5.) Nevertheless, the Fact Sheet evaluates pollutant by pollutant impact to waters of the state and demonstrates that such discharges will not unreasonably degrade the waters of the state. No antidegradation analysis is required when the Central Valley Water Board reasonably concludes that degradation will not occur. (Attwater memo p.3)

The volume of this discharge (1.0 mgd) is very small when compared to the large receiving water body. A discharge this size is not expected to cause measurable degradation. The complete mixing of the discharge at the edge of the mixing zone is consistent with this assumption.

As required by the Clean Water Act's technology-based standards for publicly owned treatment plants (POTWs), the Facility meets or exceeds secondary treatment standards as well as more stringent water-quality and performance-based effluent limitations.

Mixing zones do not violate state or federal antidegradation policies. (Attwater memo, p. 2; *EPA Water Quality Standards Handbook 2d.*, §§ 4.4, 4.4.4, and Appendix G (Questions and Answers), p. 2.) Water quality standards are not required to be met within mixing zones. An antidegradation analysis is not required for areas within a mixing zone, as long as the requirements of the mixing zone policy are met. (*American Wildlands v. Browner* (10th Cir. 2001) 260 F.3d 1192, 1195-1196, 1198.) Only a "simple" antidegradation analysis is required for a mixing zone under the State Water Board Guidance. A "simple" antidegradation analysis consists of a finding that the mixing zone will not be adverse to the purpose of the state and federal antidegradation policies. (Attwater memo, p. 2.)

CSPA Comment No. 4. Effluent Limitations for Aluminum

CSPA comments that the proposed Order does not contain effluent limitations for aluminum in accordance with Federal Regulations 40 CFR 122.44, US EPA's interpretation of the regulation, and California Water Code, Section 13377.

RESPONSE: CSPA argues that the chronic criterion (87µg/L) recommended by the USEPA Ambient Water Quality Criteria for Aluminum should be applied for this discharge. The chronic criterion is based on studies conducted on waters with low pH (6.5 to 6.8 pH units) and hardness (<10 mg/L as CaCO₃), which are conditions not commonly observed in Central Valley receiving waters like the Sacramento River. Consequently, the criterion is likely overly protective for this application. For similar reasons, the Utah Department of Environmental Quality (Department) only applies the 87 µg/L chronic criterion for aluminum where the pH is less than 7.0 and the hardness is less than 50 mg/L as CaCO₃ in the receiving water after mixing. For conditions where the pH equals or exceeds 7.0 and the hardness is equal to or exceeds 50 mg/L as CaCO₃, the Department regulates aluminum based on the 750 µg/L acute criterion. Furthermore, other major dischargers have conducted

aluminum water effects ratio (WER) studies for receiving waters within the Delta with similar characteristics as the Sacramento River that have shown that the 87 µg/L chronic criterion is overly protective under similar receiving water conditions.

Therefore, in the Sacramento River, where the pH is greater than 7 standard units and the hardness is greater than 50 mg/L as CaCO₃, application of the stringent chronic criteria (87µg/L) is overly protective. Therefore, using best professional judgment, only the acute criterion (750 µg/L) was applied in the proposed Order for protection of aquatic life and the Maximum Contaminant Level (MCL) of 200 ug/L is applied for protection of public health.

The relaxation of the effluent limits for aluminum is consistent with federal antibacksliding regulations. The Discharger has been unable to comply with the more stringent effluent limitations, the change is based on new information, such as the Utah Department of Environmental Quality recommendations and aluminum WER studies for other major dischargers within the Delta, and the relaxation does not violate state or federal antidegradation requirements, because the ambient aluminum concentrations exceed the effluent aluminum concentrations.

CSPA Comment No. 5. Effluent Limitations for Aluminum and Specific Conductivity (EC)

CSPA comments that the proposed Order improperly regulates effluent limitations for specific conductivity (EC) and aluminum as annual averages, contrary to Federal Regulations 40 CFR section 122.45(d)(2) and common sense. Federal Regulations require that permits for POTWs establish effluent limitations as average weekly and average monthly limits, unless impracticable. CSPA contends that the proposed Permit establishes Effluent Limitations for EC and aluminum as annual averages, contrary to the cited Federal Regulation. CSPA references the Central Valley Regional Board's history of establishing effluent limitations as average weekly and average monthly limits, and contends that the Regional Board has not presented any evidence of impracticability.

Regulating these constituents by imposing an annual average will allow for peaks well above the secondary MCLs, directly impacting the numerous documented downstream domestic water users. There does not appear to be any reasoning or logic in staff's attempt to relax water quality objectives. The permit must be amended to include average weekly and average monthly limits for EC and aluminum.

RESPONSE: For effluent limitations for total aluminum, which are based on the secondary MCL, the proposed Order includes an annual average effluent limitation. Secondary MCLs are drinking water standards contained in Title 22 of the California Code of Regulations. For secondary MCLs, Title 22 requires compliance with these standards on an annual average basis, when sampling at least quarterly. Since water that meets these requirements on an annual average basis is suitable for drinking, it is impracticable to calculate average weekly and average monthly effluent

limitations, because such limits would be more stringent than necessary to protect the MUN use.

For EC, the effluent limitations included in the proposed Order are based on performance of the Facility and are more stringent than the water quality-based effluent limitations necessary to protect the beneficial uses of the receiving water. For EC, annual average performance-based effluent limitations are appropriate, due to fluctuations that can occur in the Discharger's effluent caused by changes in its water supply EC. Consequently, it is impracticable to calculate performance-based effluent limitations for EC on a shorter averaging period. This method for establishing annual average performance-based EC limitations were upheld by the State Water Board in the City of Davis Order (WQ 2008-0008), which states, "The interim limitation established was appropriate, as it used a reasonable statistical approach, was based on best professional judgment, and resulted in a conservative, enforceable, performance-based limitation for EC from past and current yearly averages."